

Title: STATE-SPECIFIC VARIANTS OF TRANSLATED CODE UNDER EMULATION

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FIG. 1

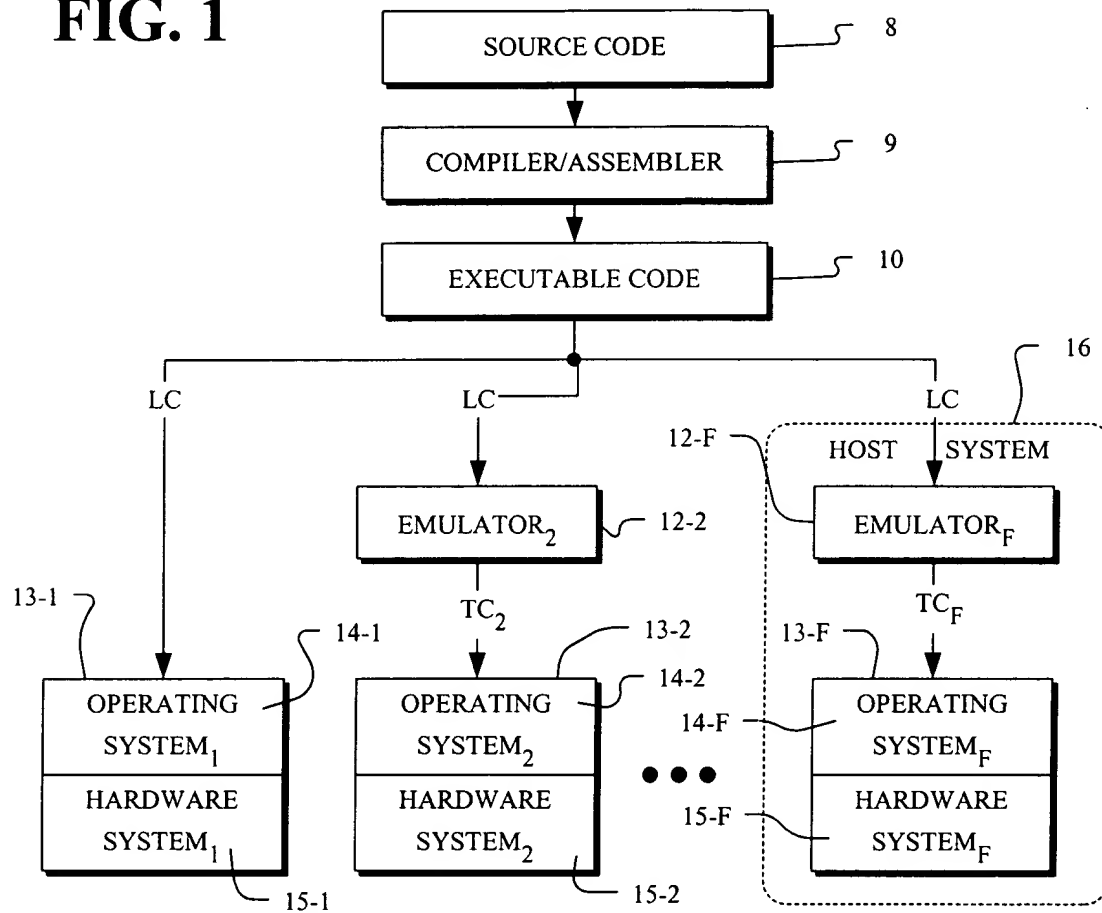
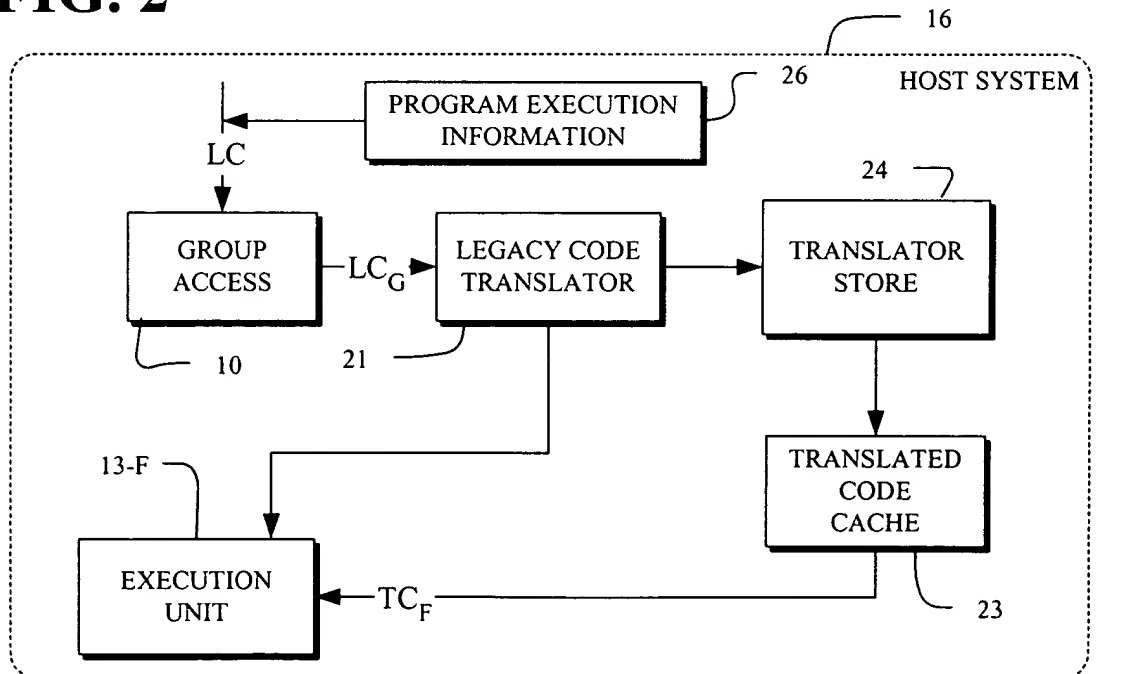


FIG. 2



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LEGACY CODE (CISC)

100	START	BALR	B1,R0
102	BASE	LM	R1,R2,DATA1
106		MVC	DATA1, DATA3
10C		AH	R1,DATA2
110		SRA	R1,1
114		SH	R2,DATA2
118		AR	R1,R2
11A		BC	TARGET
120	DATA1	DC	X'005390BC'
		DC	X'09C20004'
128	DATA2	DC	X'0009'
12A	DATA3	DC	X'800039AF'

FIG. 3



100	START	BALR	B1, R0
102	BASE	LM	R1, R2, DATA1
106		MVC	DATA1, DATA3
10C		AH	R1, DATA2

3<sub>C</sub>-10



TRANSLATED CODE (RISC)

```

BALRMOV B1 BASE
LM  ADD A1 B1,DATA1 - BASE
    LD4 R1 [A1]
    ADD A1 A1,4
    LD4 R2 [A1]
MVC  ADD A1 B1,DATA1-BASE
    ADD A2 B1,DATA3-BASE
    LD4 T1 [A2]
    ST4 T1 [A1]
AH   ADD A1 B1,DATA2 -BASE
    LD2 T1 [A1]
    ADD R1 R1,T1
B    XFER_SEQUENTIAL

```

3<sub>R</sub>-10

3<sub>C</sub>-11

110		SRA	R1,1
114		SH	R2,DATA2
118		AR	R1,R2
11A		BC	TARGET



120	DATA1	DC	X'005390BC'
		DC	X'09C20004'
128	DATA2	DC	X'0009'
12A	DATA3	DC	X'800039AF'

3<sub>C</sub>-12

3<sub>R</sub>-11

```

SRA  SHR R1 1
SH   ADD A1 B1,DATA2 -BASE
    LD2 T1 [A1]
    SUB R2 R2,T1
AR   ADD R1 R1,R2
BC   ADD A1 B1,TARGET - BASE
B    XFER_BRANCH

```

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FIG. 4

